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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,222	10/28/2003	Reza H. Shah	RSHCOV/03	2995
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DAVID W. WONG 46 WILLOWBROOK ROAD THORNHILL, ON L3T 4W9 CANADA			EXAMINER FICK, ANTHONY D	
			ART UNIT	PAPER NUMBER
			1753	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/694,222

Applicant(s)

SHAH, REZA H.

Examiner

Anthony Fick

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 13 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 13 recites the limitation "a fluid having a low boiling point" in line 2. It is unclear what temperature corresponds to a "low boiling point" and thus the scope of the claim is indefinite.
4. Claim 14 recites the limitation "said air circulating means" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 through 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Maher, Jr. (U.S. 5,931,655).

Maher, Jr. discloses a temperature control system with thermoelectric and rechargeable energy sources.

Regarding claim 1, the control system comprises a transducer adapted to generate voltage from a heat source, thermoelectric generator means 40 in the figures, an inverter charger for increasing the voltage output, transformer T1, a charge storage means for receiving the voltage and storing it, rechargeable energy source 60, control means to regulate charging of the storage means, control means 30, and an output means to deliver the charge from the storage means to a load, wires leading from 60 in any figure (see figures 1, 2 and 3 and columns 3 and 4).

Regarding claims 2 and 3, Maher, Jr. discloses the transducer is a thermoelectric device, preferably a thermopile (column 3, lines 4-10) and the rechargeable means can be a super-capacitor (column 4, lines 42-43).

Regarding claim 4, Maher, Jr. discloses the heat source is a pilot burner flame, F1 (column 2, lines 60-65).

Regarding claims 5 and 6, figure 3 shows the spark ignition of the pilot flame is connected to the control means, the control means thus regulating to turn the pilot burner on at selected times, and actuating the spark generator to turn on the pilot burner.

Regarding claim 7, the figures show a potentiometer in conjunction with two resistors connected to the regulator means.

Regarding claim 8, figure 1 shows a main gas control valve, 28, connected to the control means to actuate the main burner.

Claim Rejections - 35 USC § 103

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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maher, Jr. as applied to claims 1 through 8 above, and further in view of Buezis et al. (U.S. 6,588,419).

The disclosure of Maher, Jr. is as stated above for claims 1 through 8.

The differences between Maher, Jr. and the claims are the requirements of a specific location for the thermopile, a heat exchanger attached to the thermopile and an air circulation means. While Maher, Jr. describes a temperature control system for a gas-fired appliance, the patent does not disclose configurations within such appliances.

Buezis teaches a thermoelectric device for a gas-fired appliance. As shown in figure 1, the thermopile is located on an opposite surface of a flue wall from the burner heating the wall. The figure further shows a heat exchanger attached to the thermopile and an air circulation means for passing air through the heat exchanger to a room to be heated.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the configuration, heat exchanger, and air circulation means of Buezis with the temperature control system of Maher, Jr. because the system of Buezis allows heating of room air without line electrical connection (abstract) and the heat exchanger and air circulation means cool the opposite side of the thermopile thus

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improving the electrical production efficiency. Because Maher, Jr. and Buezis are concerned with gas-fired appliances, one would have a reasonable expectation of success from the combination. Thus the combination meets the claims.

9. Claims 11, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maher, Jr. as applied to claims 1 through 8 above, and further in view of Darbonne, SR. (U.S.P.G.Pub 2003/0226561).

The disclosure of Maher, Jr. is as stated above for claims 1 through 8.

The difference between Maher, Jr. and the claims is the requirement of a specific heating configuration.

Darbonne, SR. teaches a furnace heating apparatus that includes a pilot burner and a combustion area utilizing fuel pellets such as wood (paragraph 0003). The furnace heats air to circulate within a room. The furnace is also attached to a flue pipe steam generator that generates vapor from the heat source, and the vapor drives a steam turbine (paragraph 0064).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the temperature control system of Maher, Jr. with the furnace apparatus of Darbonne, SR. because the system of Maher, Jr. provides a reliable and efficient system for controlling and powering a temperature control system and the furnace of Darbonne, SR. is a higher efficiency furnace that burns less fuel and has a better heat exchanger than conventional fireplaces. It would have been further obvious to one having ordinary skill in the art at the time the invention was made to utilize the heat from the combustion chamber as well as the pilot flame to power the

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thermoelectric device as more heat leads to more electrical generation. Because Maher, Jr. and Darbonne, SR. are both concerned with heating devices including pilot burners, one would have a reasonable expectation of success from the combination.

Regarding claim 12, the furnace of Darbonne, SR. is a wood fire.

Regarding claim 13, the steam generator of Darbonne, SR. is considered a low boiling point fluid as water has a low boiling point compared to a metal.

10. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maher, Jr. in view of Darbonne, SR. as applied to claims 11, 12 and 13 above, and further in view of Gardner (U.S. 4,213,444).

The disclosure of Maher, Jr. in view of Darbonne, SR. is as stated above for claims 11, 12 and 13.

The difference between Maher, Jr. in view of Darbonne, SR. is the requirement of using the turbine output to operate the air circulation means.

Gardner teaches a fireplace heater unit that heats water into steam, passes the steam through a turbine which transmits to a fan or blower (abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the turbine motion to operate a blower as in Gardner for the fireplace of Maher, Jr. in view of Darbonne, SR. because the steam driven turbine provides power for the blower even without electrical connections. Thus the fireplace is more energy efficient and can operate in the event of a power outage, further improving the utility of the device. Because Maher, Jr., Darbonne, SR. and Gardner are all

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concerned with heating systems, one would have a reasonable expectation of success from the combination. Thus the combination meets the requirements of the claim.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Fick whose telephone number is (571) 272-6393. The examiner can normally be reached on Monday thru Friday 7 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anthony Fick *ADF*
AU 1753
March 17, 2007


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